

CLAIMS:

1. An electrically powered flame simulator comprising:
 - at least two light sources;
 - an integrated circuit electrically connected to the light sources for intermittently illuminating at least one of the light sources independently of other light sources such that the light sources together provide the effect of a flickering movement;
 - a power source for providing power to the integrated circuit.
- 10 2. A flame simulator as claimed in claim 1 comprising at least four light sources.
3. A flame simulator as claimed in claim 1 further comprising switch means for activating and deactivating the integrated circuit.
- 20 4. A flame simulator as claimed in claim 3 wherein the switch means has three positions comprising an on position, an off position, and an on-timed position where the flame simulator will remain activated for a predetermined length of time.
- 25 5. A flame simulator as claimed in claim 1 further comprising a microphone connected to the integrated circuit wherein the microphone inputs preselected audio signals which are processed by the integrated circuit to switch the flame simulator between and on

position, an off position and an on-timed position where the flame simulator will remain activated for a predetermined length of time.

6. A flame simulator as claimed in claim 5 wherein the integrated circuit processes signals having a higher frequency to place the flame simulator in the on position and processes lower frequency signals to place the flame simulator in the off position.

7. A flame simulator as claimed in claim 1 wherein the integrated circuit illuminates the light sources in a random operation.

8. A flame simulator as claimed in claim 1 wherein the integrated circuit illuminates the light sources in a preselected predetermined operation.

9. A flame simulator as claimed in claim 1 further comprising a light sensor for controlling operation of the flame simulator to function only when selected ambient light conditions are present.

20 10. A flame simulator as claimed in claim 1 further comprising a heat sensor for controlling operation of the flame simulator to function only when selected ambient heat conditions are present.

25 11. A flame simulator as claimed in claim 1 further comprising a body in the shape of a candle in which the flame simulator is

contained, the body having an upper end with a mounting means for receiving the integrated circuit and light sources and a chamber therein for receiving the power source.

5 12. A flame simulator as claimed in claim 11 wherein the power source comprises electrical connectors for connection to an external power member.

10 13. A flame simulator as claimed in claim 11 wherein the power source comprises at least one battery received within the chamber.

14. A flame simulator as claimed in claim 13 wherein the battery is selected from the group consisting of rechargeable and disposable batteries.

15. A flame simulator as claimed in claim 1 wherein all of the light sources are intermittently illuminated.

20 16. A flame simulator as claimed in claim 1 further comprising a body in the shape of a fire log in which the flame simulator is contained, the body having a receiving means with a mounting means for receiving the integrated circuit and light sources and a chamber therein for receiving the power source.

25 17. A flame simulator as claimed in claim 1 wherein the power

source comprises voltage sources generated by at least one output selected from one of the following: (a) a micro-controller executing seven segment light emitting diode (LED) driver software, (b) a seven segment LED driver circuit, (c) an electronic circuit 5 generating at least one of random pulses, random signals, semi-random pulses, semi-random signals, sequential pulses, or sequential signals.

10 18. A flame simulator as claimed in claim 1 wherein the light sources are light emitting diodes (LEDs).

15 19. A flame simulator as claimed in claim 11 wherein the integrated circuit is mounted on a flexible base which can be shaped so as to conform to the shape of at least a portion of the candle to conserve space.

20 20. A flame simulator as claimed in claim 1 wherein the power source is spaced from the integrated circuit and light source and is electrically in contact therewith by means of extended electrical connectors.

25 21. A candle having an electrically powered flame simulator comprising:

22 a candle body having an upper portion, a lower portion and a

chamber therein;

a flame simulator having at least two light sources located near the upper portion of the candle body, an integrated circuit within the candle body and electrically connected to the light sources for intermittently illuminating at least one of the light sources independently of other light sources such that the light sources together provide the effect of a flickering movement, and a power source in the chamber of the candle body for providing power to the integrated circuit.

10 22. An electrically powered flame simulator comprising:

at least one solid state type light source;
an integrated circuit electrically connected to the light sources for intermittently illuminating at the light source such that the light source provides the effect of a flickering movement;
a power source for providing power to the integrated circuit.

15 23. A flame simulator as claimed in claim 22 wherein the solid state light source is an LED light bulb.

20 24. A flame simulator as claimed in claim 22 wherein the solid state light source is an electro-luminescent device.

25. A flame simulator as claimed in claim 22 wherein the solid state light source is a liquid crystal device.

26. A flame simulator as claimed in claim 1 further comprising a motion detector for controlling operation of the flame simulator to function in response to motion detected within a predetermined range.

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